

CLAIMS:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A mobile appliance lift tool comprising:

a top plate having a top end, a back end, and a substantially horizontal orientation;

a bottom plate having a front end and a rear end;

a lift mechanism engaged between the top plate and the bottom plate to move the top
5 plate toward and away from the bottom plate while maintaining the horizontal orientation of the top plate.

a cart having a first pair of wheels, a pair of legs, and a frame having a first end and a second end, the pair of wheels rotatably mounted near the first end of the frame, each leg having a sleeve pivotally attaching the leg to the second end of the frame, each sleeve being adapted to
10 travel up and down the leg to selectively move the frame between a substantially horizontal configuration and a substantially inclined configuration; and

at least one strut extending across and mounted below the bottom plate, the at least one strut being selectively engaged to the second end of the frame.

2. The mobile appliance lift tool according to claim 1, wherein the cart further comprises a base plate that has an outer edge and an inner edge pivotally attached to the first end of the frame such that the base plate may be rotated to a position that is substantially perpendicular to a horizontal axis of the cart, and the at least one strut is adapted to selectively
5 rest on the outer edge of the base plate when the frame is in the inclined configuration.

3. The mobile appliance lift tool according to claim 2, wherein the base plate has a top surface and the strut is adapted to selectively rest on the top surface of the base plate when the second end of the frame is raised such that the frame is in a vertical position.

4. The mobile appliance lift tool according to claim 3, wherein the base plate has a bottom surface, and the strut is adapted to selectively rest on the bottom surface of the base plate when the frame is in the horizontal configuration and the base plate is pivoted so that the top surface rests on the frame.

5. The mobile appliance lift tool according to claim 1, wherein the frame includes an upper cross-member, and the at least one strut includes a clasp disposed to selectively engage the upper cross-member.

6. The mobile appliance lift tool according to claim 1, wherein the frame includes at least one supporting member that extends from the first end to the second end of the frame and the cart includes an upper link pivotally attached to the supporting member, a lower link pivotally attached to the upper link, and a secondary cross-member extending between and
5 operably connected to the legs of the cart.

7. The mobile appliance lift tool according to claim 6, wherein the upper link has a first end pivotally attached to the supporting member between the lower end and a midpoint of the frame, and the lower link has a first end pivotally attached to the secondary cross-member.

8. The mobile appliance lift tool according to claim 7, wherein one of the upper and lower links has a flange adapted to abut the other one of the upper and lower links when the legs are rotated away from the frame and the upper and lower links are axially aligned.

9. The mobile appliance lift tool according to claim 6, wherein each leg includes a clamp that has an opening to receive and retain the secondary cross-member.

10. The mobile appliance lift tool according to claim 1, wherein the sleeve of at least one leg includes a locking mechanism that is adapted to releaseably hold the sleeve near an upper end of the leg so that the frame of the cart may be deployed in the inclined configuration.

11. The mobile appliance lift tool according to claim 1, wherein the sleeve of at least one leg includes a locking mechanism that is adapted to releaseably hold the sleeve near an upper end of the leg such that the frame of the cart may be deployed in the inclined configuration.

12. The mobile appliance lift tool according to claim 1, wherein at least one leg has a protrusion disposed near the lower end of the leg, the protrusion being adapted to hold the sleeve when the frame of the cart is deployed in the horizontal configuration.

13. The mobile appliance lift tool according to claim 1, wherein the lift mechanism includes:

a spaced pair of first and second pivot arms;

each of the first pivot arms having a lower end pivotally connected near the rear end of
5 the bottom plate and having an upper end slidably engaged near the top end of the top plate;

each of the second pivot arms having an upper end pivotally connected near the back end of the top plate and having a lower end slidably engaged near the front end of the bottom plate,

each pair of the first and second pivot arms being pivotally connected to each other approximately midway along their lengths,

10 a cross member connecting the second pivot arms near the lower ends of the second pivot arms,

a threaded opening located in a surrounding material fixed relative to the cross member,
a drive screw threadingly extending through the threaded opening and being captured relative to the rear end of the bottom plate in a rotatable, but axially fixed manner;

14. The mobile appliance lift tool according to claim 13, further comprising a roller bar extending between the upper ends of the first pivot arms.

15. The mobile appliance lift tool according to claim 13, including a pivot bar extending between the lower ends of the first pivot arms and secured to the bottom plate.

16. The mobile appliance lift tool according to claim 13, including a pivot bar extending between the two lower ends of the first pivot arms and wherein the drive screw extends through an oversize opening in the pivot bar.

17. The mobile appliance lift tool according to claim 13, wherein the cross member has an oversized opening therethrough for receiving the drive screw.

18. The mobile appliance lift tool according to claim 17, including a bearing located in the oversized opening in the cross member.

19. The mobile appliance lift tool according to claim 13, wherein the threaded opening is formed in a block separate from, but attached to the cross member.

20. The mobile appliance lift tool according to claim 19, wherein the block is attached to the cross member via a horizontal plate spacing the block a distance rearward of the cross member.

21. The mobile appliance lift tool according to claim 13, wherein the upper ends of the first pivot arms carry rollers which are captured in slots formed in downward depending flanges of the top plate.

22. The mobile appliance lift tool according to claim 13, wherein the lower ends of the second pivot arms carry rollers which are captured in tracks formed by upward and inward extending flanges of the bottom plate.

23. The mobile appliance lift tool according to claim 13, wherein the front strut is adjustably positioned relative to the bottom plate in a front to rear direction.

24. The mobile appliance lift tool according to claim 13, wherein the top plate has downward and inward extending flanges that define a pair of tracks on respective sides of the top plate, the mobile appliance lift tool further comprising:

5 a pair of rod retainer blocks disposed within the tracks and adapted to slidingly move along the tracks when engaged; and

a front rod extending between and pivotally attached to the rod retainer blocks, the upper ends of the first pivot arms being attached to the front rod.

25. The mobile appliance lift tool according to claim 13, further comprising:

a pair of rod retainer blocks disposed near the rear end of the bottom plate; and

a rear rod extending between the rod retainer blocks, the lower ends of the first pivot arms being attached to the rear rod.

26. The mobile appliance lift tool according to claim 13, wherein the bottom plate has upward and inward extending flanges that define a pair of tracks on respective sides of the bottom plate, the mobile appliance lift tool further comprising:

5 a pair of rod retainer blocks disposed within the tracks and adapted to slidingly move along the tracks when engaged; and

a front rod extending between and pivotally attached to the rod retainer blocks, the lower ends of the second pivot arms being attached to the front rod.

27. The mobile appliance lift tool according to claim 13, further comprising:

a pair of rod retainer blocks disposed near the rear end of the top plate; and

a rear rod extending between the rod retainer blocks, the upper ends of the second pivot arms being attached to the rear rod.

28. The mobile appliance lift tool according to claim 13, wherein the cross member is a rod retainer block having an opening therethrough for receiving the drive screw.

29. The mobile appliance lift tool according to claim 13, further comprising a pivot block disposed near the rear end of the bottom plate and having a threaded opening to receive and engage the drive screw.

30. The mobile appliance lift tool according to claim 29, wherein the bottom frame has two parallel internal walls disposed such that the drive screw lies axially between the walls, and the pivot block is pivotally attached to the walls.

31. The mobile appliance lift tool according to claim 13, wherein the front strut is adjustably positioned relative to the bottom plate in a front to rear direction.

32. The mobile appliance lift tool according to claim 13, wherein the cart includes a second pair of wheels disposed at the lower ends of the legs.

33. The mobile appliance lift tool according to claim 1, further comprising:

a front rod extending across the bottom plate and slidingly engaged near the front end of the bottom plate;

a rear rod disposed near the rear end of the bottom plate and extending across the bottom

5 plate;

wherein the lift mechanism includes:

a spaced pair of first and second pivot arms;

each of the first pivot arms having a lower end pivotally connected to the rear rod
and having an upper end slidingly engaged near the top end of the top plate;

10 each of the second pivot arms having an upper end pivotally connected near the
back end of the top plate and having a lower end pivotally connected to the front rod,

each pair of the first and second pivot arms being pivotally connected to each
other approximately midway along their lengths, and

a jack operably coupled to the front rod and operably configured to selectively
15 adjust a distance between the front and rear rods.

34. The mobile appliance lift tool according to claim 33, wherein the jack includes:

a first pair of first and second lever arms each having an inner end and an outer
end, the pair of first and second lever arms are disposed in relation to the bottom plate and
pivotally attached together near the inner end of each lever arm, the outer end of the first lever
5 arm engages the front rod and the outer end of the second lever arm engages the bottom frame;

35. The mobile appliance lift tool according to claim 34, wherein the outer end of the
first lever arm is pivotally attached to the front rod so that the front rod is adapted to pivot when
slidingly engaged to the bottom plate.

36. The mobile appliance lift tool according to claim 34, wherein the outer end of the
second lever arm is pivotally attached to the rear rod.

37. The mobile appliance lift tool according to claim 33, wherein the jack further includes:

a second pair of first and second lever arms, the first pair of lever arms is disposed in mirror relationship to the second pair of lever arms;

5 a drive screw;

a rod retainer block pivotally attached to the inner ends of the first pair of lever arms and having a threaded opening to receive and engage the drive screw; and

a pivot block pivotally attached to the inner ends of the second pair of lever arms and adapted to rotatingly receive and capture the drive screw in an axial direction.

38. A mobile appliance lift tool comprising:

a cart having a first pair of wheels, a pair of legs, and a frame having a first end and a second end, the pair of wheels rotatably mounted near the first end of the frame, each leg having a sleeve pivotally attaching the leg to the second end of the frame, each sleeve being adapted to
5 travel up and down the leg to selectively move the frame between a substantially horizontal configuration and a substantially inclined configuration;

a lift tool having a bottom frame, a support platform disposed in a first orientation, and a lift mechanism engaged between the bottom frame and the support platform to move the support platform toward and away the bottom frame, while maintaining the support platform in the first
10 orientation; and

a strut mounted to the bottom frame of the lift tool and pivotally attached to the second end of the frame of the cart, the strut being disposed in a horizontal orientation when the frame is moved to the horizontal configuration and to the inclined configuration.

39. The mobile appliance lift tool according to claim 37, wherein the cart further comprises a base plate that has an outer edge and an inner edge pivotally attached to the first end of the frame such that the base plate may be rotated to a position that is substantially perpendicular to a horizontal axis of the cart, and the at least one strut is adapted to selectively
5 rest on the outer edge of the base plate when the frame is in the inclined configuration.

40. The mobile appliance lift tool according to claim 38, wherein the base plate has a top surface and the strut is adapted to selectively rest on the top surface of the base plate when the second end of the frame is raised such that the frame is in a vertical position.

41. The mobile appliance lift tool according to claim 33, wherein the base plate has a bottom surface, and the strut is adapted to selectively rest on the bottom surface of the base plate when the frame is in the horizontal configuration and the base plate is pivoted so that the top surface rests on the frame.